

*Article VI.*

## MEETINGS.

SECTION 1. An annual meeting shall be held at such time and place as the Executive Committee each year may select.

*Article VII.*

## AMENDMENTS.

SECTION 1. This constitution may be altered or amended at any annual meeting by a two thirds vote of the members present, a copy of each amendment proposed having been sent to members and fellows at least one month in advance of the meeting.

## BY-LAWS.

1. The annual dues for members and fellows shall be one dollar.
2. A majority of the members present at an annual meeting shall constitute a quorum for the transaction of business.
3. Notice of all meetings of the society shall be sent to members at least one month in advance.
4. The Executive Committee shall provide a program for all meetings, including at the annual meeting, a popular lecture, and a technical entomological exhibit of material and methods.
5. The time of the business meeting shall be published prior to the opening session of the annual meeting.

## THE GROWTH OF INSECT BIONOMICS.

The interesting suggestions for observation and collecting which are embodied in the now-issuing new edition (third) of the "Anleitung zu Wissenschaftlichen Beobachtungen Auf Reisen" edited by Professor von Neumayer do not, I am glad to notice, omit attention to the ethologic or bionomic aspect of natural history. In the chapter given to Arthropods, revised by Dr. L. Reh, section *II*, devoted to special hints for observation, is composed of a series of most suggestive paragraphs successively entitled polymorphism, parthenogenesis, varieties, protective resemblance, mimicry, terrifying means, weapons, death-feigning, autotomy, regeneration, directive marks, interrelations with other animals, parasitism, plant injuries, galls, etc., benefits and injuries to man, pollination of flowers, care of the young, instincts, special habits, etc., luminosity, and sound-making. In these paragraphs a glimpse is given of the fascination of the bionomic study of insects, and of the wonderful opportunities for illuminating new observations. Such observation or study need lack nothing of the exactness or detailed character of morphologic or systematic work. It is too commonly assumed that ecology, ethology, bionomics, etc., are synonyms for fads, for superficial observation and reckless generalization. In just so far as the study of insect bionomics is pursued carelessly it is worthless; pursued exhaustively, accurately and keenly it is immensely worth while. Folsom's book will help draw many entomologists into the alluring web of insect bionomic study. And this is a consummation devoutly to be wished. But don't give up the old habit of eye-straining exactness and utter fidelity to the minutiae of observation, as well as scientific caution in the formulation of generalizations.

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SOME COMMON ERRORS IN THE NOMENCLATURE OF THE  
DIPTEROUS WING.

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THERE are in common use two systems of nomenclature for the dipterous venation at the present time. A third, that proposed by Comstock and Needham, based upon comparative studies, has, so far, not received much approbation among students of the order.

The first and most commonly used of these systems is that given in detail by Loew in the first volume of the Monographs of North American Diptera; the second that adopted by Schiner in his later writings, and, since his time, by Wulp and Verrall especially, as also several other recent writers. Neither of these was the creation of the writers. That given by Loew was merely a codification of the usages of many of the early writers, especially Meigen and Wiedemann, with some additions and modifications proposed by himself. Schiner's system, likewise, was a rehabilitation, with modifications and additions, of the usages of various writers, notably the English, with some terms of the earlier continental entomologists. Loew's terminology was based chiefly upon the museid venation, which he seemed to look upon as the more typical and primitive; he never attempted to apply his terminology to the nemoerous venation; in fact Loew never took enthusiastically to this division of the diptera. Schiner's system also was more especially applied to the braehycerous and museid types, though he did attempt to homologize it with the nemoerous venation.

The application of neither system to the Nemoera has been altogether happy. Osten Sacken, when he came to use the Loewian nomenclature in the Tipulidae, was perplexed and led astray by some evident incongruities on Schiner's part, and his example has done more than that of any one else to perpetuate some very palpable errors, which, it seems to me, for the sake of consistency should be corrected — if either of these systems is to be used. Comstock and Needham did better, and their homologies are, for the most part, correct, I believe, though I am far from being assured that they have, in all cases, reached the correct conclusions, or that future researches will not modify the interpretations they have accepted for some of the diptera.

Schiner was the first to reach the conclusion that the 'fourth' longitudinal vein of the wing is the one which may be three-branched; and that the fifth is two-branched

only. The hind branch of the fifth is the one which Loew called the 'posterior basal cross-vein', but in this Loew was very clearly wrong; this hind branch is not a cross-vein in any sense of the word, and few writers have made use of the term since his time. The vein closing the anal cell in the higher diptera should be known as the 'posterior branch of the fifth vein.' The anterior branch of this vein is the one bounding the fifth posterior cell, when present, in front, and is always present as a discrete vein in those wings having a discal cell in the vein separating the last posterior cell from the second basal cell. The two branches of this vein are conspicuously evident of course in many of the Nemocera without discal cell. Comstock, agreeing with Schiner, believes that the fourth vein (Vein V) is primitively three-branched, the proximal branch enclosing the discal cell, and, in nearly all cases he assumes that when but a single branch of the fourth vein is present it is the proximal one; a belief with which I do not at all agree. It is a singular fact that no dipteran, (unless it be *Lonchoptera*) presents a simple three-branched fourth vein unconnected with the fifth, and I am myself inclined to the belief that it is the fifth vein which is normally three-branched and not the fourth; and that the discal cell, when present, is not due to the proximal branching, but rather to the presence of a true cross-vein separating the second basal from the discal cell. I of course have not had the opportunity to study the venation of other orders of insects as had Comstock and Needham, but so far as my studies go, I find no conclusive evidence in them. If the fourth vein is three branched and discal cell present, the vein separating the discal from the second basal is of course the first section of the proximal branch of the fourth vein; if the fifth vein is really the one that is three-branched, then this vein, at the outer end of the second basal, is always a true cross-vein, which it always is in the Comstock system when the discal cell is absent. Schiner it was who, very strangely for so acute an observer, gave to the short vein at the outer end of the second basal cell in the nemocera the name of posterior or great cross-vein, and Osten Sacken, perhaps led astray by his authority at a time when he had not given much thought to the brachycerous diptera, applied to the first section of the anterior branch of the fifth the name of 'great cross-vein' in the Tipulidae. The name 'posterior' or 'great' cross-vein is applied to the cross-vein closing the discal cell outwardly in all the muscid flies. Now it is very evident that the absence of a discal cell, in the mosquitoes for instance, is not due to the coalescence of the discal and second basal cells, but to the absence of the 'posterior cross-vein' of the muscid and brachycerous flies, and the application of this name to the vein at the inner end of the discal cell is very clearly incongruous. My attention to this incongruity was first fixed by the common usage among students of the Culicidae in calling the vein at the outer end of the second